

ART 34 AMDT

-11-

What is claimed is:

1. A ceramic packing element (1, 6, 8) having an essentially uniform cross-section along an axis (l) passing through a center (C) of the element and about which the element is symmetrical defining a length (L) of the element, and characterized by:  
a ratio of a width dimension (W) to the length (L) being from 1.5:1 to 5:1, and first and second concave external surfaces (2, 3) at the ends of height and width axes (*h*, *w*) respectively perpendicular to the length direction, said concave surfaces being connected by surfaces that are selected from convex surfaces (4) and concave surfaces (4) connected to the concave surfaces by relatively short intermediate flat surfaces (7), and the element being provided with at least three through passages (5) in the length direction, at least one of the passageways (5e) being kidney bean-shaped in cross-section, the kidney-bean shaped passageway having two generally parallel arcuate surfaces.
2. An element (1, 8) according to claim 1 in which the concave surfaces (2, 3) are connected directly to convex surfaces (4).
3. An element (1, 6, 8) according to Claim 1 or 2 in which width and height dimensions (W, H) of the element are unequal with the ratio of width to height being from 1.25:1 to 3:1.
4. An element (1, 6, 8) according to Claim 3 in which width and height dimensions (W, H) of the element are in a ratio of from about 1.3:1 to 2.0:1.
5. An element (1, 6, 8) according to any one of Claims 1-4 in which the element is provided with from 3 to 275 passageways.
6. An element (1, 6, 8) according to any one of Claims 1-5 in which at least a plurality of the passageways (5a, 5b, 5c, 5d) are round in cross-section and a diameter (D) of each round passage is less than about one half of the height (H) of the element.

## ART 34 AMDT

-12-

7. An element (1, 6) according to Claim 6 in which the plurality of passageways (5a, 5b, 5c, 5d) have identical dimensions.
8. An element (8) according to any one of Claims 1 to 7 in which the at least one kidney bean-shaped passageway (5e) has a largest dimension (D) which is up to about 2/3 of the height (H) of the element.
9. An element (1, 6, 8) according to any one of Claims 1 to 8 in which a total cross-sectional area of the passages represents from 20 to 75% of the total cross-sectional area of the element.
10. An element (1, 6, 8) according to Claim 9 in which a total cross-sectional area of the passages represents from 30 to 67% of the total cross-sectional area of the element.
11. An element (1, 6, 8) according to any one of Claims 1 to 10 in which the ceramic is a porous material.
12. An element (8) according to any one of Claims 1 to 11 in which the passages include a plurality of second passages (5a, 5c, 5d) having a second shape, the at least one kidney bean-shaped passage being positioned intermediate at least one of the plurality of second of passages and the center of the element.
13. An element (1, 6, 8) according to any one of Claims 1 to 12 in which a ratio of height to width of the element, H:L is from about 5:1 to 15:1.
14. An element (8) according to Claim 13 in which H:L is about 8:1.
15. A method of forming a bed of packing elements comprising:  
extruding a mixture comprising one or more ceramic-forming components;  
sectioning the extruded mixture to form sections;  
firing the sections to form packing elements (1, 6, 8), wherein each of the packing elements is characterized by first and second

**ART 34 AMDT****-13-**

concave external surfaces (2, 3) at the ends of height and width axes ( $h$ ,  $w$ ) respectively perpendicular to a length direction (L), said concave surfaces being connected by surfaces that are selected from convex surfaces (4) and convex surfaces (4) connected to the concave surfaces by relatively short intermediate flat surfaces (7), a ratio of a width dimension (W) to the length (L) being from 1.5:1 to 5:1, and the element being provided with at least three through passages (5) in the length direction, at least one of the passageways (5e) being kidney bean-shaped in cross-section, the kidney-bean shaped passageway having two generally parallel arcuate surfaces;

assembling a bed of packing elements which includes a plurality of the fired packing elements.